N

CALIFORNIA

WESTLINK

North-South Level II Packet Radio Link

. Sacto.

NEVADA

S.F.

. San Jose
⊙ Loma Prieta
  W6AMT

Monterey .
  ⊙ Williams Hill. W6AMT-1

. San Luis Obispo
⊙ W6IXU
  ⊙ Santa Barbara   WB6DAO
                      K6TZ

. Los Angeles
WB6UUT ⊙ ⊙ La Habra
            WA6OZJ

W6AMT
(Loma Prieta)
  ↓ 145.01 MHz
W6AMT-1 (Williams Hill)
  ↓ 145.01 MHz
W6IXU (Nipomo)
  ↓ 145.01 MHz
WB6DAO (Santa Barbara)
  ↓ 450 MHz link
K6TZ (Santa Barbara)
  ↓ 145.01 MHz   .145.36 MHz
W6SE (San Diego)

⊙ San Diego
  W6SE

P.P.R.S. 2/05/85
          NT6V

MEXICO

WA6OZJ ¹⁴⁵·³⁶→ WB6UUT (Laguna Hills)
(Rolling Hills)

NG1JP   ANWIN   -NAPA VALLEY

MT. ASHLAND
7,523' OREGON

MOUNT
SHASTA

CALIFORNIA DIGIPEATER MAP

EXISTING AND PROJECTED

W6AMT-1 Sees the Following:
WA6RWN,W6IXU,W6AMT,WB6A1E-1,WB6GML-1,
W6AMT-2,W6BXN-1

As of Feb 10,1985 GML,AMT-2 &BXN-1
not on 145.01

SF to LA Path Exists from AMT,AMT-1,IXU,DAO,
TZ,OZJ OR FROM TZ to W6SE or EKU-1

TO San Jaoquin Valley from North via
AMT,AMT-1 or AMT,RWN.

WHEN AMT-2 and/or GML-1 ARE ONLINE
PATH NORTH/SOUTH WILL IMPROVE

RENO
120mi

SALT LAKE CITY 384 mi

W6AMT-3

BIG
ROCK

SACRAMENTO

WB6PQM-1
OAKLAND
WB6PQM-2
K6VCO-2
WD6EVM-1
SF
WB6UGG
KA6M-2 BELMONT
KA6NAN-1
W6AMT
J6IIU-1
W3YS-1
GILROY
MONTEREY

W6BXN-1
MT BULLION

WA6RWN-1
WHITE MTN

VTAH 240 mi

BALD MTN
WB6A1E-1

PARK RIDGE
WA6RWN

LAS VEGAS 180 mi

KINGMAN ARIZ 250 mi

W6AMT-1
WILLIAMS
HILL

WA1NHP-1

W6IXU

ARROYO
GRANDE

WB6DAD

SANTA
BARBARA
(SANTA YNEZ)

K6TZ
W6AMT-2

FRAZIER
MTN
WA6GML-1

OAT MTN
WB5EKU-1

LA

WA6OZJ
PALOS VERDES

PACIFIC
OCEAN

280mi
PHOENIX TO SANDIEGO

WB6WLV (OTAY MTN)
W6SE (ENCINITAS)
SAN
DIEGO
W6MNO (SD)

MAP VIA NI6A

MEXICO

LEVEL TWO DIGIPEATERS -CALIFORNIA

CALL	QTH-MOUNTAIN	ELEV	ERP	FREQ	COVERAGE	STATUS
N6IIU-1	BLACK MOUNTAIN ABOVE PALO ALTO	2400'	100 W	145.01*	SF BAY AREA	OPEN MARCH 1
KA6NAN-1	BLACK MOUNTAIN	2400'	100 W	146.58	SF BAY AREA	MAY MOVE TO 145-BAND.
K6VCO-2	OAKLAND HILLS	700'	50 W	146.58	SF BAY AREA	MAY MOVE TO 145-BAND
KA6M-2	BELMONT	500'	50 W	146.58	SF BAY AREA	MOVING TO 145.09 MARCH 1,1985
W3VS-1	Morgan Hill above Gilroy	800'	10w	146.58	SF BAY & SANTA CLARA VALLEY	MAY MOVE ?
WA6FSP-1	MELCHER HILL FREMONT	700'		145.03	SF BAY	APRIL 1,1985
WA1NHP-1	MONTEREY	low level	100 W	146.58	MONTEREY & SF BAY	May Raise Elev & change Call to K6LY-1
W6AMT	LOMA PRIETA 3800' SANTA CRUZ MTNS		100w	145.01	GREATER SF REGION	open
W6AMT-1	WILLIAMS HILL ABOVE KING CITY	2800'	100 w	145.01	Central Coast/ SJV/	open
W6AMT-2	SANTA YNEZ	4000'	100w	145.01	Santa Barbara/ San Diego	OPEN @ MAR 1
WA6RWN	PARK RIDGE above Visalia	8000'	40W	145.01*	San Joaquin Valley	Solar Powered
WA6RWN-1	White Mt. above Bishop	14,000'	40W	145.01	Las Vegas,Salt Lake, Reno,No.Cal,No.Az.	Solar Power Summer 85
**✷ WA6GML-1	Frazier Mt. Above Lebec	8000'	100W	145.01	LA,SD, Kern Co,	March 85 Open
WB6AIE-1	BALD Mt. Above Fresno	5300'	100W	146.58	SJV	Moving to 145.01 March 1
W6BXN-1	Mt Bullion SACTO-FRESNO above Merced	4000'	100w	146.58/ 145.01	SJV	APRIL 1,85
✷✷✷ W6AMT-3	BIG ROCK (Sonoma County)	4000'	100 W	.145.01	Napa,Sonoma,Lake & No.Bay Counties	April ?
K6TZ	SANTA BARBARA (Santa YNEZ	4000'	100W	145.36	Santa Barbara/SD	
W6IXU	ARROYO GRANDE	200'	100W	145.01/145.36 VIA 440 TO WB6DAO	Santa Barbara	Crossover link via 440 Mhz

LEVEL TEO DIGIPEATER -CALIFORNIA

CALL	QTH?/MOUNTAIN	ELEV	ERP	FREQ	COVERAGE	STATUS
WB6DAO	SANTA BARBARA			100W	145.36/440	LINK ^{FM/} to K6TZ to/from W6IXU	TEMPORARY LINK
WB6WLV	OTAY MOUNTAIN	?	?	144.76	San Diego	
W6SE	ENCINITAS	?	?	145.36	San Diego/LA	
W6MNO	SAN DIEGO			145.36	San Diego/LA	
WA6OZJ	PALOS VERDES			145.36	LA BASIN	24Hr
WB5EKU-1	OAT MTN			145.36	SIMI/San Fernando Valley/parts of SD	
WB6PQM-1	CONTRA COSTA HILLS	500'	50W	223.58	Contra Costa/Solano Sacto/Counties	
WD6EVM-1	San Leandro	500'	100W	223.58	SF BAY	temp. on 223.56 will return to 223.58 @ March,85
WB6PQM-2	ALAMEDA COUNTY			223.58	SF BAY	Planned March 1
WB6UGG	SAN JOSE	500'	100 W	145.01	SF BAY	
✳✳✳	MOUNT SHASTA			145.01	Northern Cal - NOT YET OBTAINED	

MAIL BOXES

CALL	QTH?/MOUNTAIN		FREQ	COVERAGE	STATUS
KA6M-1	MENLO PARK		146.58	SF BAY	May Move to 145.09 March 1-UNIX SYSTEM
WB5VUL-1	PALO ALTO RED CROSS		146.58	SF BAY	XEROX 820 System May move to 145.00 band
N6ECT	SAN FRANCISCO		146.58	SF BAY	CPM-MAY MOVE to 145 Band Sporadicly Operating
WB6YMH-2	PALOS VERDES		145.36	LA/SD	XEROX 820
WB6UUT	LAGUNA BEACH		145.36	LA/SD	APPLE COMPUTER/UCSD ASCAL
N6BGW	GARDENA	✳✳	145.36+146.145		Similar to above mailbox enter"help"at logon.
WB6HHV-2	MIRA MESA		144.76		XEROX 820
N6CXB	GLENDALE	✳✳	146.145		FILESERVER

✳ Digipeaters Ca a le of Remote Frequency Changes
✳✳ Mailboxes active on 146.145(input)146.745(output) on a timesharing on/off basis with
   other users.
✳✳✳ CALL SIGN SUBJECT TO CHANGE.

FREQUENCY USE RECOMMENDATIONS BY THE FREQUENCY COORDINATION COMMITTEE

AS MOST OF YOU KNOW , THERE IS A LINK TO LA ON 145.01 VIA W6AMT,W6AMT-1,W6IXU,
WB6DAO,K6TZ,WA6OZJ. A LINK ALSO EXISTS VIA W6AMT,WA6RWN OR W6AMT,W6AMT-1 TO
MOST OF SJV. SOON THE LA LINK SHOULD BE REDUCED TO 3 OR 4 HOPS AND CAVITIES ARE BEING
INSTALLED IN THE AMT SYSTEM MACHINES. TO OPTIMIZE THROUGHPUT AND TO MOST EFFICIENTLY
UTILIZE OUR FREQUENCIES,CERTAIN RECOMMENDED GOOD OPERATIONG PRACTICES ARE BEING
RECOMMENDED BY THE PPRS FREQ. COORDINATING COMTEE (FCC) TO HELP ALLEVIATE THIS
HEAVY LOADING/AND/OR TO HELP PREVENT COLISIONS AND HENCE IMPROVE THROUGHPUT.
WE ARE NOT DICTATING TO ANYONE WHAT TO DO AND REQUEST YOUR INPUT IN ALL MATTERS.
THESE SUGGESTIONS ARE FOR HEAVY LOADING TIMES:

1.USE 145.01 FOR CALLING/MONITORING/LINKING. ONCE CONTACT IS ESTABLISHED MOVE OFF
FREQUENCY (145.03 OR ANYOTHER FREQUENCY OF YOUR CHOICE) IF YOU CAN WORK DIRECT OR THRU
OTHER DIGIPEATERS. YOU ARE WELCOME TO STAY ON 145.01 IF YOU REQUIRE OR IF THERE IS NO QRM.

2.ALWAYS LISTEN (MONITOR ON) BEFORE YOU TRANSMIT.THERE MIGHT BE EMERGENCY TRAFFIC ON
FREQUENCY! THIS IS ALWAYS A GOOD AMATEUR RADIO PRACTICE.

3.AVOID LONG TESTS ON W6AMT SYSTEM. THERE ARE OTHER FREQUENCIES AVAILABLE FOR BOTH
DIRECT AND DIGIPEATER TESTING.

4.USE 145.09 FOR HOST MAILBOX SYSTEMS AND LARGE FILE TRANSFER MAILBOXES.

5.THE LINKING SYSTEM OWNERS REQUEST YOU LIMIT BEACONS TO NOT MORE THAN ONE/30 MINUTES
(B E 180 for TAPR /AEA BOARDS).

6. TURN OFF CWID . ALTHOUGH USEFUL IN ALERTING FRIENDS THAT YOU ARE ON FREQUENCY, CWID
SHOULD ONLY BE USED ON 145.01 DURING LIGHT LOADING AS IT OTHERWISE CAUSES INTERFERENCE.

7.AVOID LARGE FILE TRANSFERS ON 145.01. HOPEFULLY WE CAN ACCOMPLISH THIS WHEN LEVEL 3
  ARRIVES.

8.BE POLITE/COURTEOUS/ and HELPFUL TO THE NEWCOMERS AS THEY CERTAINLY WILL NEED EDU-
  CATION.WHEN SIGNING CLEAR(SK) GIVE THE OTHER STATION A CHANCE TO SAY GOODBYE AND
   FINISH UP BEFORE DISCONNECTING. THIS IS BASIC COURTESY. LET US ALL MAKE AN
  EFFORT TO CREATE AN ATMOSPHERE OF TRUE FELLOWSHIP ON PACKET AND NOT .   DEGRADE
  INTO WHAT HAS CHARACTERIZED CB RADIO AND SOME VOICE TWO METER CIRCUITS.PATIENCE!

9.SETTING MAXFRAME TO ONE HELPS PREVENT YOU FROM COLLIDING WITH YOUR OWN OTHER OUTSTANDING
  FRAMES AND ACKS .

10. SET PACLENGTH TO 128 OR LESS CREATES SHORT PACKETS THAT ARE LESS LIKELY TO COLLIDE
   AND ALSO VADG BOARDS CANNOT SUPPORT SUCH LONGER PACLENGTHS. SOME OTHERS HAVE
   SUGGESTED TO SET PACLENGTH AT 256 TO MAXIMIZE THROUGHPUT AND MINIMIZE COLLISIONS
   DUE TO ACKS (THE THEORY BEING THE MORE ACKS ,THE MORE COLLISIONS).(YOUR INPUT
   IS WELCOME ON THIS MATTER.PERSONALLY, I HAVE OBSERVED SHORT PACKETS BEING THE MOST
   SUCCESSFUL BUT THROUGHPUT???).

11. WHEN TESTING ON 145.01 (EVEN THOUGH YOUR LOCAL DIGIPEATER SHOWS LITTLE OR NO ACTIVITY)
    BE AWARE YOU MAY BE INTERFERING WITH HEAVY LOADING AT OTHER DIGIPEATER AREAS.
   MINIMIZE LOADING! ON MULTIHOPB. YOU DO NOT NEED TO CONNECT TO YOURSELF TO TEST A
   LINKPATH. TRY TO CONNECT TO THE KNOWN NODE OR DIGIPEATER. IT WILL SAY "CONNECTED"
   OR"BUSY" IF THE PATH IS OPEN/HEARING YOU.

12. TRY SETTING FRACK 4 OR LONGER, RETRY15 OR LARGER.

LOOK FOR THE DIGIPEATERS COMING UP ON 145.03 AND 14509 AND THE GATEWAY ON 145.05
CHECK OUT THE DIGIPEATERS ON 223.58 MHZ AND HAPPY DX!   FCC/PPRS

West Coast Digipeaters, Mailboxes and Gateways

Site Location	Call Sign	Freq	Hgt ASL	Notes	Coverage Area
Mt. Ashland	WB6NWP-1	145.01	5000'		Southern Ore./Mt. Shasta
Shasta Bally	WA6YNG-1	145.01	9000'	*	Sou. Ore. to Sacto Vall.
Mt. St. John	W6AMT-7	145.01	8000'		Sac Val to Mt. Ashland
Angwin	N6IJP-1	145.0.	2000'		N. Bay, scans .01 05 09
Richmond	W6CUS-1	145.09/(7.097)		#	Richmond Red Cross
Berkeley	WD6CMU-1	145.09	1000'		SF Bay area (220.95)
Oakland	K6VCO-2	145.09	700'		San Francisco Bay Area
Menlo Park	KA6M-1	145.09		#	S San Francisco Bay Area
Palo Alto	WB6VUL-1	145.09		#	S San Francisco Bay Area
Saratoga	N6JOA	145.03			For CDF traffic, also on 5.01
Black Mt.	KA6NAN-1	146.58	2400'		San Francisco Bay Area
Loma Prieta	W6AMT	145.01	3800'		SF Bay Area/San Joaq Val
Morgan Hill	G8HJD	145.03	1000'		CDF Hq. also 145.01
Castle Rock	N6GSA-1	145.09	3200'		Santa Cruz/Monterey
Monterey	K6LY	145.09			Low level (Naval School)
Williams Hill	W6AMT-1	145.01	2800'		Salinas Valley/Cent Coast
Fremont Peak	W6BXN	145.01	4300'	*@	Sacramento Val/SJ Valley
Bald Mt.	WB6AIE-1	145.05	5300'		San Joaquin Valley
Clovis	WA6OSA-1	145.05		#	Fresno area (gateway -2)
	WA6OSA-2	145.01		#	Fresno (gateway to -1)
Park Ridge	WA6RWN	145.01	8000'	@	San Joaquin Valley
Blue Ridge	WA6YLB	145.01	5700'	*@	San Joaquin Valley
Arroyo Grande	W6IXU	145.01	200'	#	South Central Coast
Santa Ynez	W6AMT-3	145.01	4000'		South Central Coast
Santa Barbara	WB6DAD	145.36			Arroyo Grande/Santa Barb
	KA6SOX-1	145.01	3200'		Arroyo Grande/San Diego
	K6TZ	145.36	400'		Santa Barbara
Los Angeles	WB5EKU-2	145.36	dualport		Simi, San Fern Val, SD
	(WB5EKU-12	220.95	9.6 K Baud		Simi, San Fern Val, SD)
	WB6YMH-2	145.36		#	Los Angeles/San Diego
	N6BGW	145.36/146.145		#	Los Angeles
Fullerton	WA6VSE	145.01	300'		LA/San Bernardino/SD
Mt. Ktot	AA6TN-1	145.01	8600'		LA/Big Bear Mt.
Palos Verdes	W6AMT-3	145.01	1500'		Los Angeles/San Diego
	NK6K-1	145.01	1500'		Los Angeles/San Diego
	WA6OZJ	145.36			Los Angeles Basin
Sierra Peak	N6EMO-1	145.01	2400'		Los Angeles/San Diego
	W6AMT-4	145.01	2400'		Los Angeles/San Diego
Cucamonga	KD6QJ	145.01		#	14.103 gateway
Laguna Beach	WB6UUT	145.36		#	Los Angeles/San Diego
San Diego	WB6HHV-1	145.01	500'		San Diego (soon higher)
	W6SE	145.36			San Diego (Encinitas)
	W6MNO	145.36			San Diego
	WB6WLV	144.73			San Diego/Los Angeles
(Mt. Otay) Torrey Pines	KA6IOA-1	145.01			Gateway to EASTNET via satellite

```
* = moving to 145.05 at any time
# = mailbox system on line
@ = capable of remotely changing frequency
```

West Coast Digipeaters, Mailboxes and Gateways

Coming soon to a hill near you:

Sonoma Mt.   KA6ATN   145.01   2500' @   N. SF bay/Sacto Valley
Mt. Vaca   W6AK-1   145.05   2300' @   Sacramento Valley
Melcher Hill   WA6FSP-1   145.03   1000'   S San Francsco Bay Area
Mt. Allison   WB6RFW-1   145.01   2600' @   Sacto Valley/So. SF Bay
Black Mt.   N6ITU-1   145.01   2400' @   San Francisco Bay Area
White Mt.   WA6RWN-1   145.01   14,200'   So CA/No AZ/So NV
Onyx Mt.   W6AMT-5   145.01   9000'   Las Vegas
Frazier Peak   WA6OML-1   145.05   8000'   Kern Co./LA/San Diego
San Diego   W6AMT-6   145.01   4000'   San Diego/Los Angeles

North/South paths: (all on 145.01 MHz.)

            W6BXN - WA6RWN   / NK6K-1
              | | W6AMT-2 ------------ \ / |
              | | /   \   \/   W6AMT-3
    W6AMT-7 - W6AMT - W6AMT-1 < | > KA6SOX-1 / |
                            \ | /   \ WB6HHV-1
                          W6IXU

NOTE: The above includes only the major digipeaters in the WESTNET
       system and are NOT the only paths available.   The following is
       meant to be a guide to aid you in finding a workable path.

W6AMT-7 can see W6AMT
W6BXN can see WB6AIE-1, W6AMT, WA6RWN, WA6YLB
W6AMT can see W6AMT-1, WB6AIE-1, W6BXN, WA6RWN, WA6YLB
W6AMT-1 can see W6AMT, W6AMT-2, W6IXU, WA6RWN
WA6RWN can see W6AMT, W6AMT-1, W6BXN, WA6YLB
WA6YLB can see W6BXN, WA6RWN
W6AMT-2 can see W6AMT-1, W6AMT-3, WB6HHV-1, W6IXU, NK6K-1, KA6SOX-1
KA6SOX-1 can see W6AMT-2, W6AMT-3, WB6HHV-1, W6IXU, NK6K-1
NK6K-1 can see W6AMT-2, W6AMT-3, WB6HHV-1, KA6SOX-1
W6AMT-3 can see W6AMT-3, KD6SU-1
W6IXU-1 can see W6AMT-2, WB6HHV-1, NK6K-1, KA6SOX-1
WB6HHV-1 can see W6AMT-2, W6AMT-3, NK6K-1, KA6SOX-1

If you have any corrections, additions or other information pertinent
to this type of list, please send them to me either via the W6CUS-1

West Coast Digipeaters, Mailboxes and Gateways

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Mt. Ashland	WB6NWP-1	145.01	5000'		Southern Ore./Mt. Shasta
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Mt. St. John	W6AMT-7	145.01	8000'		Sac Val to Mt. Ashland
Angwin	N6IJP-1	145.xx	2000'		N. Bay, scans .01 05 09
Richmond	W6CUS-1	145.09/(7.097)		#	Richmond Red Cross
Berkeley	WD6CMU-1	145.09	1000'		SF Bay area (220.95)
Oakland	K6VCO-2	145.09	700'		San Francisco Bay Area
Menlo Park	KA6M-1	145.09		#	S San Francisco Bay Area
Palo Alto	WB5VUL-1	145.09		#	S San Francisco Bay Area
Saratoga	N6JOA	145.03			For CDF traffic, also on 5.01
Black Mt.	KA6NAN-1	146.58	2400'		San Francisco Bay Area
Loma Prieta	W6AMT	145.01	3800'		SF Bay Area/San Joaq Val
Morgan Hill	G8HJD	145.03	1000'		CDF Hq. also 145.01
Castle Rock	N6GGA-1	145.09	3200'		Santa Cruz/Monterey
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Bald Mt.	WB6AIE-1	145.05	5300'		San Joaquin Valley
Clovis	WA6OSA-1	145.05		#	Fresno area (gateway -2)
	WA6OSA-2	145.01		#	Fresno (gateway to -1)
Park Ridge	WA6RWN	145.01	8000'	@	San Joaquin Valley
Blue Ridge	WA6YLB	145.01	5700'	*@	San Joaquin Valley
Arroyo Grande	W6IXU	145.01	200'	#	South Central Coast
Santa Ynez	W6AMT-2	145.01	4000'		South Central Coast
Santa Barbara	WB6DAO	145.36			Arroyo Grande/Santa Barb
	KA6SQX-1	145.01	3200'		Arroyo Grande/San Diego
	K6TZ	145.36	400'		Santa Barbara
Los Angeles	WB5EKU-2	145.36	dualport		Simi, San Fern Val, SD
	(WB5EKU-12	220.95	9.6 K Baud		Simi, San Fern Val, SD)
	WB6YMH-2	145.36		#	Los Angeles/San Diego
	N6BGW	145.36/146.145		#	Los Angeles
Fullerton	WA6VSE	145.01	300'		LA/San Bernardino/SD
Mt. Ktot	AA6TN-1	145.01	8600'		LA/Big Bear Mt.
Palos Verdes	W6AMT-3	145.01	1500'		Los Angeles/San Diego
	NK6K-1	145.01	1500'		Los Angeles/San Diego
	WA6OZJ	145.36			Los Angeles Basin
Sierra Peak	N6BMO-1	145.01	2400'		Los Angeles/San Diego
	W6AMT-4	145.01	2400'		Los Angeles/San Diego
Cucamonga	KD6SJ	145.01		#	14.103 gateway
Laguna Beach	WB6UUT	145.36		#	Los Angeles/San Diego
San Diego	WB6HHV-1	145.01	500'		San Diego (soon higher)
	W6SE	145.36			San Diego (Encinitas)
	W6MNO	145.36			San Diego
(Mt. Otay)	WB6WLV	144.76			San Diego/Los Angeles
Torrey Pines	KA6IQA-1	145.01			Gateway to EASTNET via satellite

```
* = moving to 145.05 at any time
# = mailbox system on line
@ = capable of remotely changing frequency
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Packet Radio Frequency Allocations
Northern California

HF (common usage)

Note: frequencies seem somewhat approximate.

```
        7.    Mhz (lsb)
       10.147 MHz (lsb)
       14.103 MHz (lsb)
```

Six Meters

```
       51.120 MHz        -       51.720 MHz
       51.140 MHz        -       51.740 MHz
       51.160 MHz        -       51.760 MHz
       51.180 MHz        -       51.780 MHz
```

Two Meters

```
       145.010 MHz              Nationwide calling freq
       145.030 MHz              low level linking
       145.050 MHz              Major north South Linking
       145.070 MHz              Chaos Freq
       145.090 MHz              local Mailbox entry freq

       146.580 MHz              traditional packet freq
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220 MHz

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       220.800 MHz - 221.000 MHz        allocated No. Cal.

       220.950 MHz              planned So. Cal/No. Cal links

       223.42 MHz               1200 baud (Bell 202) simplex
       223.58 MHz               1200 baud (Bell 202) simplex
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450 MHz

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       441.500 MHZ              low level 1200 baud simplex
```

900 MHz

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       904.000 - 904.500 MHz, and
       916.000 - 916.500 MHz   digital wideband
```

1200 MHz

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       per ARRL bandplan
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145.01

Oregon

California   Nevada

WA6YNG-1

W6AMT-7 ——————— WA7DIA-1

W6BXN

W6AMT-0

W6AMT-1

WA6YLB-1   WA7HWO-1
                           K7WS

W6AMT-2

AA6TN-1   Arizona

W6AMT-3

N6BMO-1

W6AMT-4

Mexico

851105gHF

145.05

Oregon

California   Nevada

WB6AIE-1
WB6AIE
MAILBOX

KB6C-1
MT. FRASIER

COVERS MOST
OF So. CAL.

Arizona

Mexico

85110 ghF

INFORMATION EXPLOSION

o NOTE: EVERY THREE TO FIVE YEARS WILL SEE A DOUBLING
        OF COMMUNICATION's DATA RATE BANDWIDTH   ← HMM..

o IN THE SIXTIES:
     -PHYSICAL MEDIA WAS TRANSPORTED

o IN THE SEVENTIES:
     -110 & 300 BAUD ASYNCH LINKS WERE UTILIZED
     -MODEM TECHNOLOGY WAS INTEGRATED WITH LSI
     -LIMITED MICROWAVE LINKS WERE SUPPORTED
     -DEDICATED HI QUALITY PHONE LINES WERE USED

o IN THE EIGHTIES:
     -1200/2400/4800 BAUD MODEMS
     -MICROWAVE LINKS BECOME COMMON TRANSPORT VEHICLE   ── Whose?
     -SATELLITE COMMUNICATIONS OPENS UP THE WORLD
     -BROADBAND LAN's EXPLOIT 10 MBPS
     -STANDARD's IN COMMUNICATIONS EVOLVE

o IN THE FUTURE
     -FIBER OPTIC's BECOMES STANDARD FOR 100/300 MBPS   ── Hmmm..
     -VLSI INTEGRATES DIGITAL AND CATV TECHNOLOGY   ── CATV?

THE EVOLVING METHOD OF CONNECTING SYSTEMS VIA LAN CONCEPTS

ISO 7-LAYER OSI MODEL

APPLICATION LAYER	FILE TRANSFER, ELECTRONIC MAIL, VIRTUAL TERMINAL
PRESENTATION LAYER	DATA PRESENTATION, ASCII TO EBCDIC CONVERSION, TERMINAL CAPABILITIES
SESSION LAYER	SESSION MANAGEMENT, ESTABLISH CONNECTION WITH OTHER PROCESS
TRANSPORT LAYER	PROCESS-TO-PROCESS MESSAGE DELIVERY, SEQUENCING, FLOW CONTROL, ERROR CONTROL
NETWORK LAYER	ROUTING
DATA LINK LAYER	FRAMING, TRANSMISSION ERROR
PHYSICAL LAYER	RAW BITS OVER COMMUNICATION CHANNEL

STANDARDIZED INTERFACES

AMT

LAYER 2: DATA LINK LAYER

7
6
5
4
3
DATA LINK
1

- RESPONSIBLE FOR SENDING/RECEIVING FRAMES
- SPECIFIES:
  - FRAME FORMAT
  - ACCESS METHOD

FRAMES

- **A FRAME IS THE ENVELOPE IN WHICH THE DATA IS SENT**

| | FLAG/ PREAMBLE | SOURCE ADDRESS | DESTINATION ADDRESS | CONTROL | INFORMATION | FLAG |

NETWORK SPECIFIC

| 7 |
| 6 |
| 5 |
| 4 |
| 3 |
| DATA LINK |
| 1 |
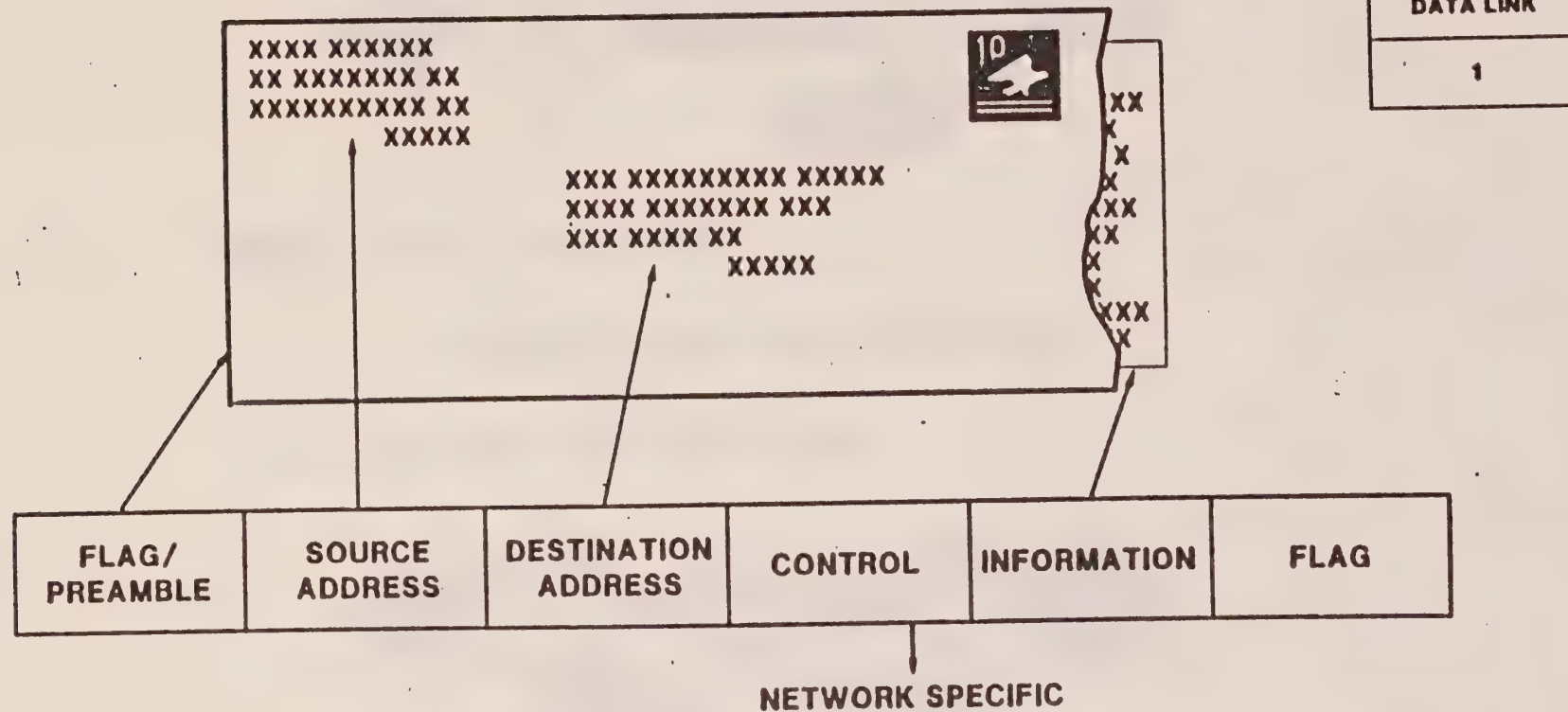
ACCESS METHOD: CSMA/CD

CARRIER SENSE

MULTIPLE ACCESS

STATIONS ARE PEERS

COLLISION DETECTION
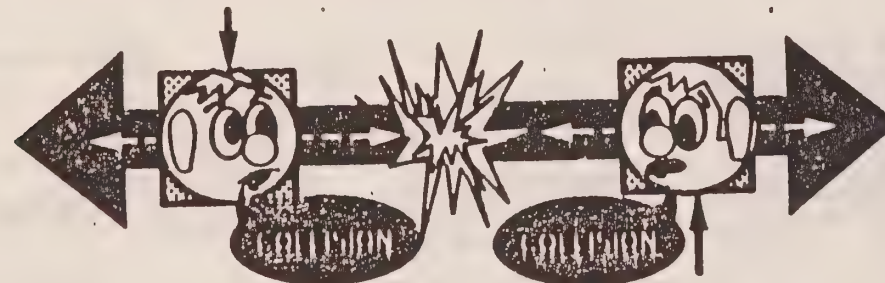
ACCESS METHOD: TOKEN PASSING

- EACH STATION IN A PREDETERMINED ORDER

TRANSMITTING STATION POSSESSES THE TOKEN
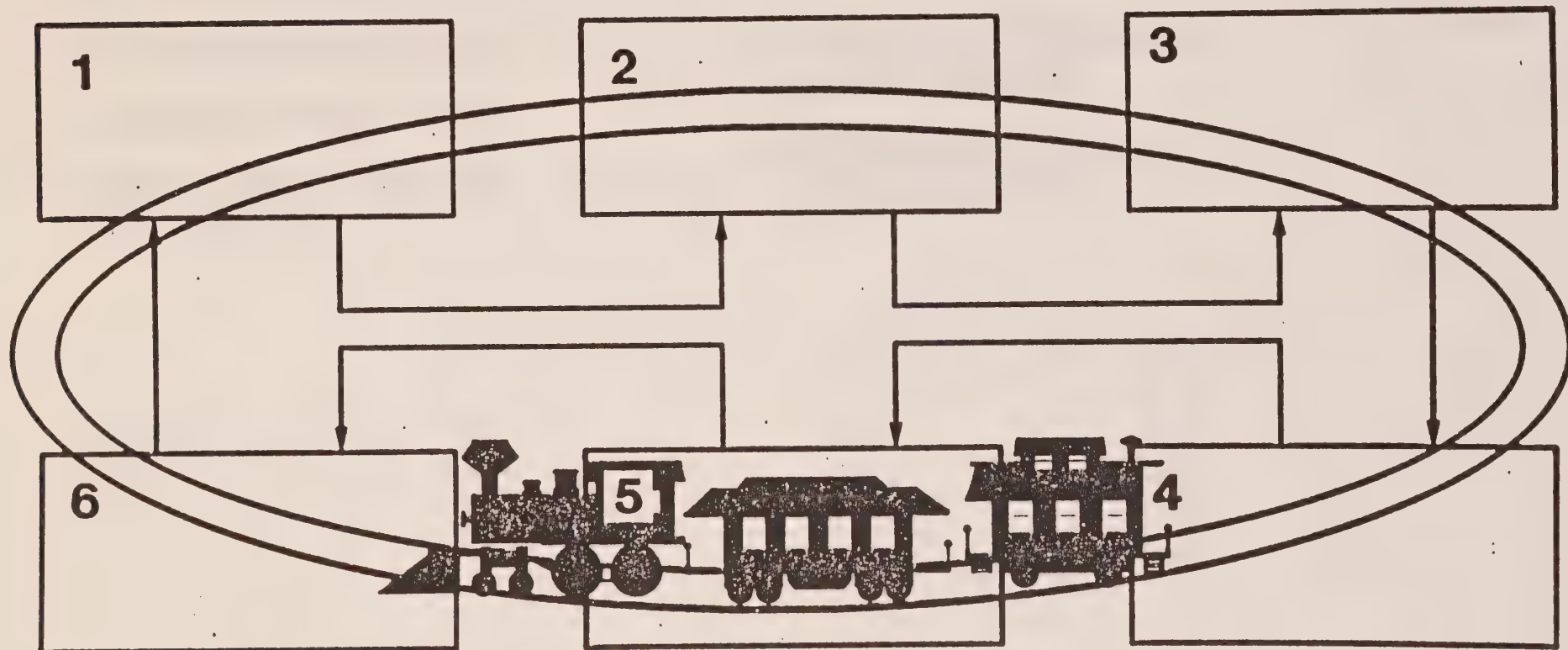
ACCESS METHODS: CSMA/CD VS. TOKEN PASSING

CSMA/CD ADVANTAGES

- FIELD PROVEN
- STANDARDS APPROVED
- LSI AVAILABLE NOW
- LOWER WIRING COST
- ERROR RECOVERY IS AUTOMATIC
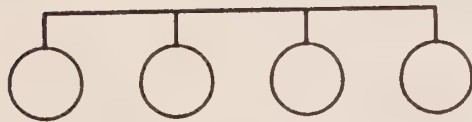
TOKEN PASSING ADVANTAGES

- CAN USE FIBER OPTICS
- NOT DISTANCE LIMITED
- LESS CONSTRAINED AT HIGHER SPEEDS
- DETERMINISTIC VS. PROBABILISTIC
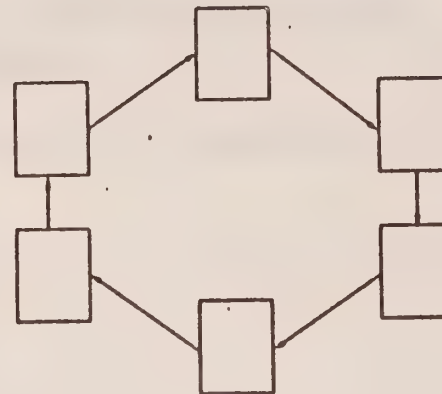
7
6
5
4
3
DATA LINK
1

LAYER 3
NETWORK LAYER

- CHOOSE BEST AVAILABLE PATH BETWEEN NETWORKS

- NOT CURRENTLY NEEDED FOR OFFICE NETWORKS, BUT
  NEEDED FOR AMATEUR NETWORKS

DATAGRAM

- MESSAGES ARE SENT ON A BEST EFFORT BASIS

- ANALOGY: FIRST CLASS MAIL

XXXX XXXXXX
XX XXXXXXX XX
XXXXXXXXXX XX
XXXXX

XXX XXXXXXXXX XXXXX
XXXX XXXXXXX XXX
XXX XXXX XX
XXXXX

10

LAYER 4: TRANSPORT

7
6
5
TRANSPORT
3
2
1
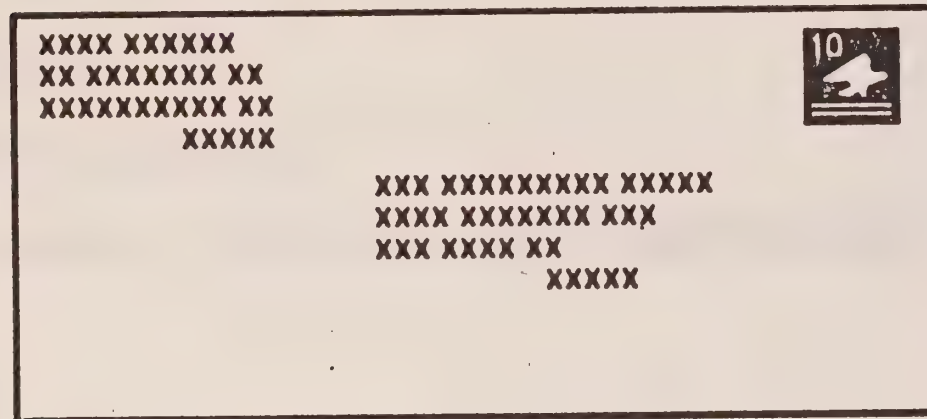
- RESPONSIBLE FOR RELIABLE END TO END MESSAGE SERVICE

    SPECIFIES:

    - VIRTUAL CIRCUIT

    - ACKNOWLEDGEMENTS

    - TIME OUTS

    - RETRIES

    - FLOW CONTROL

    - ASSEMBLE/DISASSEMBLE MESSAGES INTO FRAMES

VIRTUAL CIRCUIT

- MESSAGES ARE SENT ON A GUARANTEED BASIS

- ANALOGY: RETURN RECEIPT MAIL
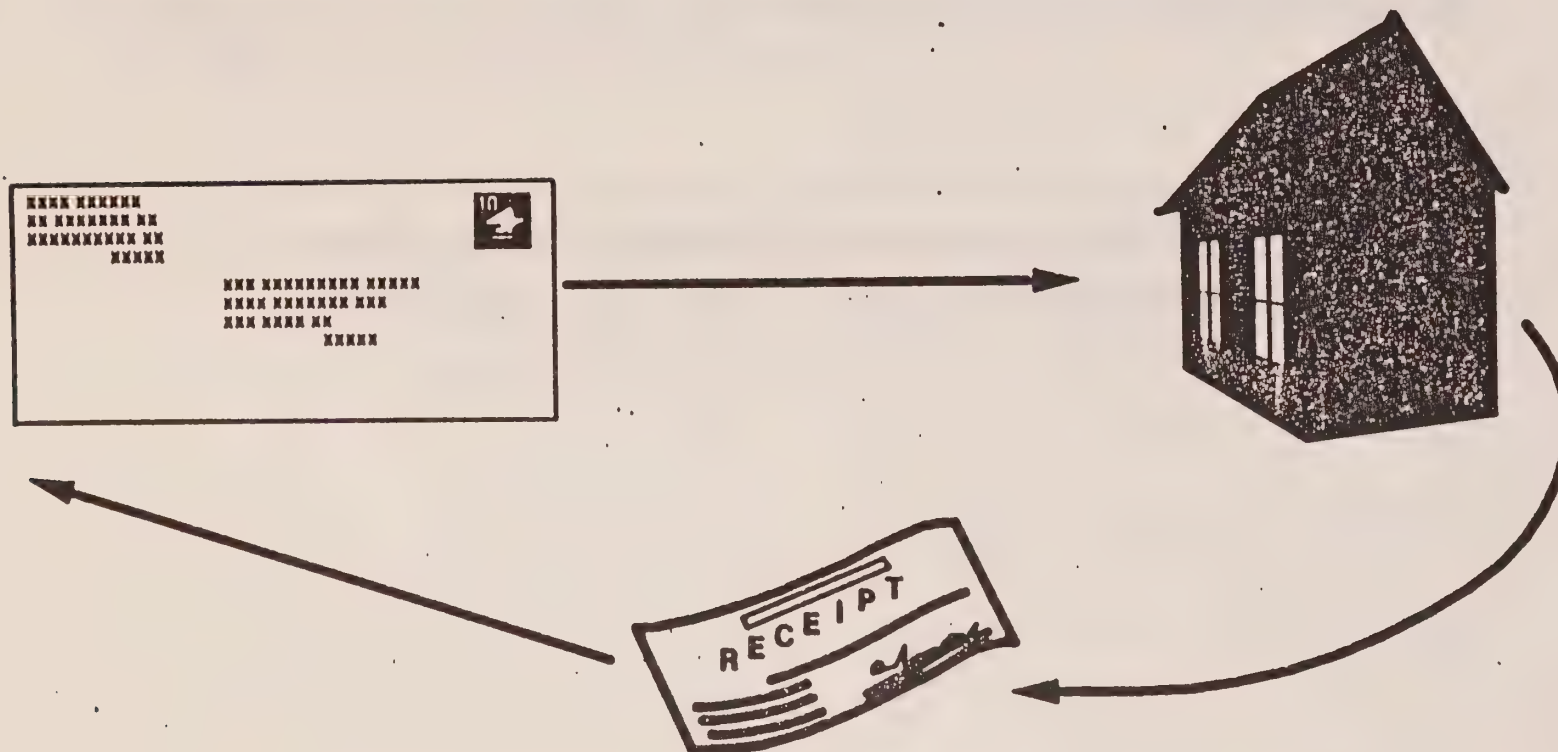
THE INTERNATIONAL
STANDARDS ORGANIZATION LAYERS

	LAYER NUMBER		FUNCTION
NETWORK MANAGEMENT	APPLICATION	7	SELECTS APPROPRIATE SERVICE FOR APPLICATIONS
	PRESENTATION	6	PROVIDES CODE CONVERSION DATA REFORMATTING
	SESSION	5	COORDINATES INTERACTION BETWEEN END-APPLICATION PROCESSES
	TRANSPORT	4	PROVIDES END-TO-END DATA INTEGRITY AND QUALITY OF SERVICE
	NETWORK	3	SWITCHES AND ROUTES INFORMATION
	DATA LINK	2	TRANSFERS UNITS OF INFORMATION TO OTHER END OF PHYSICAL LINK
	PHYSICAL	1	TRANSMITS BIT STREAM TO MEDIUM

o GATEWAY:

IS IMPLEMENTED WHEN YOU NEED TO COMMUNICATE TO TWO
INDEPENDENT PROTOCOLS OR ARCHITECTURES.
EXAMPLE: ETHERNET TO X.25

N = NETWORK LAYER   P = PHYSICAL LAYER
L = LINK LAYER
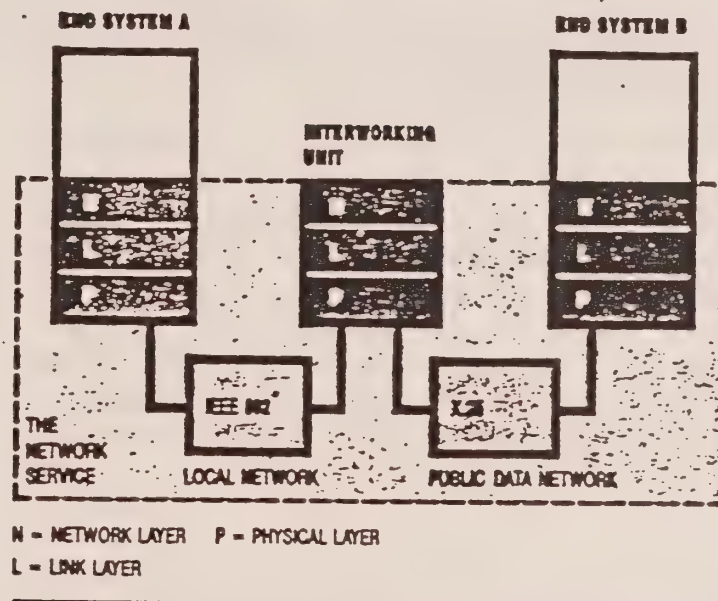
Operating Hints
========= =====

"The greatest fool is he who thinks he is not one and all others are"
Baltasar Gracian

The "operating hints" appearing in this section are intended as
a basis for continued refinement of this, the most fun "mode" in
Amateur Radio. They are a result of discussions with cogent
packeteers throughout the US and are worth the price paid.

It is hoped that most are self evident and won't snag on anyones'
"pet peeve". If anything suggested is inappropriate, obviously
the situation at hand should dictate operation; if anything suggested
is brain damaged, this document *can* be used to help start a barbecue.

Discussion on types of QSOs
"How many men become abstract as a way of appearing profound!"
Joseph Joubert

Simple "Simplex"

Simplex operation is an act between consenting
adults. Since it uses no digipeaters, it is only
hoped that it occurs on a frequency that doesn't
have a digipeater on it. See the Band Plan if you
need an idea for a frequency. Simplex activity on
digipeater frequencies ties up the digipeater
unnecessarily and gets people mad at you.

Multi-hop QSOs

These are a little more fun. They generally involve
one or more digipeaters and are subject to greater
delays and retries. Multi-hop QSOs are also the
stuff networks are made of.

Mailbox "Normal operation"

Mailbox operation has been divided into "normal"
operation and "file server" applications. In
"normal" operation there is no lengthy data
transfer and thus other people can slip a packet
in every so often. As mailboxes get smarter and
allow multiple connections, many people conducting
"normal" operation will be indistinguishable from...

Mailbox/File server operation

File serving over a network is "White Lightning"
that everyone can see for themselves. If it
occurs when you WERE in QSO with someone, you
should probably go get a cool one. Massive
continuous data transfer is somewhat anti-social
unless carefully planned.

Good Ideas
        "There is no mistake so great as that of being always right"
                        Samual Butler

When on frequencies where there is a digipeater, use the digipeater
even though a simplex path is possible. This is good practice. It
keeps the channel throughput up by preventing other users from
transmitting at the same "packet instant".

Parameter	Comment
CWID OFF	Turn off your CWIDs. Transmitting CWIDs is an easy way to tell everyone that you are new to packet radio.
FRACK 7	Display a little patience... everyone else does.
MAXFR 1	set your "maxframe" to 1 this prevents your "outbound" packets from colliding with the (hopefully) "inbound" ACKnowledgements
RET 8	Eight retries is a LOT. Some people feel that setting retries to infinity (RET 0) will INSURE that they get through. Not true. Though it will insure that your call will get mentioned in high places...

Decidedly bad ideas

        "Next to a sincere compliment I think I like a well-deserved
                and honest rebuke"
                        William Feather

Packet radio provides "perfect error free" communication. While
not exactly true, packet IS pretty darn good. There is a tendency
when logged in to various mailboxes to type a couple of "carriage
returns" when the mailbox gets a little slow. This is NOT GOOD.
Eventually these "carriage return" packets will get there (if
all goes well) and they will wreak havoc on the mailbox. Patience.

Sending BEACONs is a lot of fun. It can be used for "expressing
oneself". It can be used for *lots* of things. Beacons can
even be sent ALL OVER. Sigh. User beacons are the bane of all
those others who actually want to communicate. They are anti-
social (and your call is attached!). Probably, just probably, beacons
are justified to announce a birth or some other natural disaster
(just kidding), but they have little informational impact otherwise.
Please be aware of everyone else before you automate your "self
expression". We thank you in advance.

CWIDs are verbotten, decidedly bad, unnecessary, and downright
unfriendly.

Simplex activity on Major Digipeater Frequencies is another
operating practice that seems relatively harmless at first blush.
What it impacts though is the digipeater that sees perhaps three
hundred Users. If just three simplex QSOs are going on within
sight of the hilltop, through traffic stops and everyone starts

looking for the culprit.

Parameter	Comment
RET 0	As mentioned before, this will send FOREVER IF you are waiting for an ACK. Hopefully it will blow up your radio; unfortunately, it usually just ties up a network. ties up a network. ties up a network. ties up a network.

Jury is out... need comments
> "Make it your habit not to be critical about small things"
> Edward Everett Hale

Some people use "prosigns" in their packets to indicate their status in the QSO. Put another way, they use "bk" (or equivalent) to indicate that they are done with this "transmission" and that the other station may now transmit without jumbling up the screen. Others feel that since packet radio simulates "full duplex" operation (in a decidedly non-real-time manner) that these "prosigns" are extraneous and take up extra spectrum. If you like clean screens, try a "bk" or two, if you can't afford the bytes, try it without...

Parameter	Comment
PACLEN 32	Short packets are real good for noisy paths (or where you think one of the "hops" is a little short of "full quieting". OSCAR packeteers and SSB types are fond of short packets....
PACLEN 256	Long packets are real good for paths where all signals are good, full quieting signals. Large packets keep network overhead to a minimum and provide "lulls" for others to get their packets out. Saying "<ctrl>V<cr>" at the terminal allows more than one line of text per packet...
PACLEN ???	Obviously, there is room for experimentation.

End of Operating Hints
=== == ========= =====

PPRS DIGIPEATER COORDINATION REQUEST
==== ========= ============= =======

Date of Application: _____

Call(s) of Digipeater(s): _____
                           _____
                           _____

Sponsoring Organization or Individual:
                           _____
                           _____

Person to Contact: _____
Call: _____ Phone Num: _(_____)_____
Address: _____
          _____
          _____

Frequencies proposed shall be _____MHz.
(eg.: 145.01, .03, .05, .07, .09; 146.58, 220.950,
223.56, 223.58, 223.60, 441.50MHz. Or, if other, please
specify: _____ MHz and mode: _____.
Modulation and modulation products will meet FCC
criteria for the above and mode of operation planned.

Projected area of coverage shall be: _____
_____

which is completely within NARC jurisdiction except for
the following anticipated areas: _____
_____
_____.

Common name of digipeater site: _____.
Height above Sea Level is: _____ ft/meters.
Latitude: _____ Longitude: _____.
ERP (watts) shall be: _____.
Polarization shall be: _____.

Please describe directional antenna(e) if applicable:
_____
_____
_____
_____.

Complete list of sanctioned machines proposed
digipeater(s) will link to: _____
_____
_____
_____
_____
_____
_____

_____.

Existing co-located Digipeaters: _____

_____.

Interconnection Hardware Protocols: (eg., Bell 202,
k9ng, t208, etc.): _____

_____

_____.

Interconnection Software Protocols: (eg., AX.25, TCP/IP,
X.224, etc.): _____

_____

_____

_____

_____

_____.

==
==

Process of PPRS Coordination:

Before Application:

NCA shall supply upon request sufficient frequency and
site data to allow submittal of application.

NCA shall perform preliminary discussions with affected
parties with the goal of expediting decisions regarding
the proposed application.

After Submittal:

NCA shall obtain verbal or written concurrance of affected
parties; all disenting views shall be heard.

NCA shall deliver a summary of the actions taken regarding
the application to the Board of the PPRS for final action;
this summary shall be submitted no later than 60 days from
receipt of Application.

After Decision:

If digipeater is approved, the Applicant, together with
the PPRS Board and NARC governing body, shall be issued
the approved Conditions of Sanction.

NCA shall monitor operation of digipeater to insure
continued observation of the Conditions of Sanction.

Grounds for Withdrawl of PPRS Sanction:

If, in the opinion of the Board, there has been a willful

and continued violation of the Conditions of Sanction as
issued by the Board, the Board may, at its option, issue a
formal Withdrawl of Sanction. The Withdrawl is effective
30 days after issuing if and only if all Conditions of
Sanction are not again met by the end of the 30 day period.

Recourse for Appeal of Withdrwal:

Within the 30 day period after the issuing of the
Notice of Withdrawl of Sanction, a representative
of the sponsoring organization or individual may contact
the NCA or the PPRS Board and offer justification.

In such a case, the decision of the PPRS Board shall
be considered final.

==
==

_____
Applicant   Date

ghf:850726:quest

Request for User, digipeater sponsors, and gnomes comments

>   gnome : n : a person who just 'reads the mail' and sometimes comes
>   out of the woodwork to toss a packet...
>   and then goes back into his burrow.

Couple of Questions:

1) What are your major packet radio uses and interests?

> _____
> _____
> _____
> _____
> _____

2) What features do you wish to see in the network of your dreams?

> _____
> _____
>
> and, _____
> _____
>
> and, _____
> _____
> _____
> _____
>
> and, _____
> _____
> _____

3) Your Call _____

4) Your Name and Address

> _____
> _____
> _____

5) Phone Num (opt): _____

6) Digipeater(s)/Frequencies used:

> _____
> _____
> _____
> _____
> _____

7) Mailboxes(s) used:

_____

_____

_____

8) Packet radios best feature:

_____

_____

_____

9) Pet Peeve (use other side if necessary):

_____

_____

_____

```
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 *
 *     Oregon
 *
 ***************************************************************
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 *    California           *    Nevada
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```

Last Minute Additions:

        The Ham-Sig on Compuserve has expressed interest in adding
the directory to their Packet Database. Please note any stations
in your area that can communicate via Compuserve.

        Harold, NK6K submitted the following description of the
Southern California LAN as a suggestion for inclusion in the
Packet User Directory. We think that it is an excellent idea and
plan to add that feature as soon as we get them from you. Any
station that is submitted by you will have a footnote referencing
the description of your LAN.

Welcome to the magic world of Packet radio.   (Oct 1, 1984)

This file will briefly introduce you to the resources available
to the packet user in the Southern California LAN (Local Area
Network).

                              Frequencies

1. 145.36 - This is the primary packet channel for the SoCal
area. There are several digipeaters and mailbox systems
available. Simplex operation. Strictly packet operation except
for the weekly packet voice net. Very active nightly and on
weekends.

2. 144.76 - This is a secondary packet channel for the Los
Angeles area, and the primary channel for San Diego file transfer
operations. A digipeater and a host system are available.
Strictly packet operation except for weekly packet voice net.

3. 146.595 - Secondary packet channel for both Los Angeles and
San Diego. Little activity at present in Los Angeles due to
adjacent channel interference from 146.61 repeater. Full time
digipeaters or mailboxs are currently unavailable.

4. 146.745 (out), 146.145 (in) - RF duplex packet repeater
located on Mount Bill (San Fernando Valley area). Channel shared
with PL operated voice repeater in Palos Verdes, and carrier
squelch voice repeater in San Diego. Packet repeater requires 202
modem tones for keyup. Active at various times. Set TXD to 10 to
allow for repeater keyup delay. Mailbox available. Packet
operation is not welcome on the San Diego machine.

5. 441.5 - NBFM simplex packet channel. Currently light activity.
This channel is for GROUND LEVEL use only, prior approval from
SCRRBA on a case by case basis is required for hilltop use to
prevent interference to existing installations. (The Southern
California 450 band plan is low in, high out). We are currently
seeking a coordination for a wideband channel for high baud rate
experimentation, THIS IS NOT IT!

6. 435.172 -> 145.832 (out) - Oscar 10 AMICON channel. Active on
weekends. Currently the standard 202 tones at 1200 baud are being
used. PSK and other modem standards will be used in the future.

Nets & Meetings

1. The LAPG (Los Angeles Packet Group) holds its voice net Monday
nights at 8:00 P.M. on 145.36. Meetings are held at 11:00 AM on
the last Saturday of the month at the home of WA6TUB, 4814 West
130'th   street in Hawthorne.   (This is same day as the TRW swap
meet and is about a 10 minute drive away.) LAPG can be reached
at P.O. Box 6026, Mission Hills, CA 91345.

2.   The SDPG (San Diego Packet Group) holds its voice net Tuesday
nights on 144.76 at 9:00 PM weekly. Meetings are held at 11:00 AM
on the first Saturday of the month at Howard Johnsons resturant
at I-8 and Waring road.

3.   A packet roundtable is held on 146.745 following the Monday
night LAPG voice net.

Mailbox Digipeaters, and Packet hosts

1. WB6UUT - Very active mailbox system with users from both San
Diego and Los Angeles. 145.36 simplex, digipeat thru WA6OZJ from
Los Angeles. Located in Laguna Beach. 24 hour operation. Apple
computer running UCSD PASCAL. To use, connect to WB6UUT. Type
HELP at command prompt. Use the QUIT command to log off, the
system will recover if you disconnect in the middle of a session
though, so don't worry.

2. WB6YMH-2 - Remote CP/M packet host. 145.36 simplex, digipeat
thru W6SE from San Diego area, direct or thru WA6OZJ in Los
Angeles area. Located in Palos Verdes. Two disk drives provide
980k on line storage. Packet related files are uploaded regulary
from various networks. An Oscar tracking program is available for
execution. Surplus Xerox 820 (Z-80) computer. To use,   connect
to WB6YMH-2. If you are unfamiliar with CP/M systems, enter
HELP at the A0> prompt. Use BYE to log off. This system will
also recover from an unexpected disconnect.

3. WB6HHV-2 - Remote CP/M packet host. 144.76 simplex, digipeat
thru WB6WLV from Los Angles area, direct or thru WB6WLV from San
Diego. Located in Mira Mesa. Surplus Xerox 820 (Z-80) computer.
Software similar to WB6YMH-2.

4. WB6WLV - Otay mountain, San Diego area. 144.76 simplex.
Digipeat only. 24 hour operation. Good coverage into Los Angeles
area.

5. W6SE - Encinitas. 145.36 simplex. Provides a good path from
the Los Angeles area into San Diego. Digipeat and local operator
John.

6. W6MNO - San Diego. 145.36 simplex. San Diego area digipeat ad
local operator Chuck. Path into Los Angeles with good conditions.

AMT
Box 700174
San Jose, CA 95170-0174

Hank Magnuski
311 Stanford Ave.
Menlo Park, CA 94025

Hank;

Several things...

Firstly, thanks for getting the info on the linking of the SF
bay area to LA into the Gateway. I read it with open amusement.
Had a couple of inaccurate or misleading data though...

>   AMT-1 was operational and the first LA/SF contacts
>   occured on February second, a Saturday.
>
>   AMT and AMT-1 were just a bridge to the part of the
>   network (why is it called WESTNET?) already put into
>   place by some friends (wb6dao and wb6dfu) working the
>   problem from the southern end. They are part of a
>   repeater group that some AMT members are also members
>   of. It was no "coincidence" that they were ready on
>   frequency and with antennae aimed north.

I don't know where you got the data, but, please feel free
to contact an AMT type in future press releases about what
AMT is doing. (Actually, Harold should have known better if
he proofed the Gateway stuff...).

Secondly, I got a thingee in the mail from the Faire people
saying that the pre-registration fees are 15$. I hope you
are not getting a bum deal... (nor I, as I have already sent
you 40 bucks for the show... (which should be a good one)).

Thirdly, I am very interested in the 220MHz 9600 baud stuff
and AMT ready to buy (four) right now... I have been warned
of the RF quality problems regarding the Hamtronics 220 radios
and I was told that the Spectronics radios are the more costly
but better solution. I want to be compatible with the stuff
that you are doing... (I need four radios to start; one for
each of the high level links that need to go up). Suggestions
will be appreciated. *greatly!*

Fourthly, I have preliminary info on a PC (there is only
one PC) compatible multi-port TNC based on the i8044 in
all its grandeur. It is coming out of LA and will also
have a stand alone configuration... It IS NOT real yet,
and therefore not ready for publication, but, I love
gossip as much as thou.

See you at PPRS;

George Klammer (wb6amt)

cc: wb6asr, wd6e, w6amt(files)

Two Meter Digipeater and Mailbox Sites of California

Site Location	Call Sign	Freq	Hgt ASL	Notes	Coverage Area
Mt. St. John	W6AMT-7	145.01	9000'		Sac Val to Mt. Ashland
Richmond	W6CUS-1	145.09/7.097	Gateway	#	Richmond Red Cross West CO Co CTY
Berkeley	WD6CMU-1	145.09	1000'		SF Bay area
Oakland	K6VCO-2	145.09	700'		San Francisco Bay Area
Menlo Park	KA6M-1	145.09		#	S San Francisco Bay Area
Palo Alto	WB5VUL-1	145.09		#	Palo Alto Red Cross- SF BAY
Saratoga	N6JOA	145.03			For CDF traffic, also on 5.01
Black Mt.	KA6NAN-1	146.58	2400'		San Francisco Bay Area
Loma Prieta	W6AMT	145.01	3800'		SF Bay Area/San Joaq Val
Morgan Hill	W3VS-1	145.03	800'		S San Francisco Bay Area
	G8HJD	145.03			CDF Hq. Temp. Location also 145.01
Monterey	WA1NHP-1	146.58	(soon 145.01)		Monterey low level
Williams Hill	W6AMT-1	145.01	2800'		Salinas Valley/Cent Coast
Fremont Peak	W6BXN	145.01	4300'	*@	Sacramento Val/SJ Valley
Bald Mt.	WB6AIE-1	145.01	5300'	*	San Joaquin Valley
Clovis	WA6OSA-2	145.01		*#	Fresno area
Park Ridge	WA6RWN	145.01	8000'	@	San Joaquin Valley
Blue Ridge	WA6YLB	145.01	5700'	@ *	San Joaquin Valley
Arroyo Grande	W6IXU	145.01	200'	#	South Central Coast
Santa Ynez	W6AMT-2	145.01	4000'		South Central Coast
Santa Barbara	WB6DAO	145.36			Arroyo Grande/San Diego
	KA6SOX-1	145.01	3200'		Arroyo Grande/San Diego
	K6TZ	145.36	400'		Santa Barbara
Los Angeles	WB5EKU-2	145.36	dualport		Simi, San Fern Val, SD
	(WB5EKU-12	220.95	9.6 K Baud		Simi, San Fern Val, SD)
	WB6YMH-2	145.36		#	Los Angeles/San Diego
	N6BGW	145.36/146.145		#	Los Angeles
Palos Verdes	W6AMT-3	145.01	1500'		Los Angeles/San Diego
	NK6K-1	145.01	1500'		Los Angeles/San Diego
	WA6OZJ	145.36			Los Angeles Basin
Sierra Peak	N6BMO-1	145.01	2400'		Los Angeles/San Diego
Cucamonga	KD6SQ	145.01/14.103		#	gateway
Laguna Beach	WB6UUT	145.36		#	Los Angeles/San Diego
San Diego	WB6HHV-1	145.01	500'		San Diego (soon higher)
	W6SE	145.36			San Diego (Encinitas)
	W6MNO	145.36			San Diego
(Mt. Otay)	WB6WLV	144.76			San Diego/Los Angeles
RANCHO CORDOVA	KB6JM-1	145.01	100'		Sacto cty OES-Sacto County

Coming soon to a hill near you:

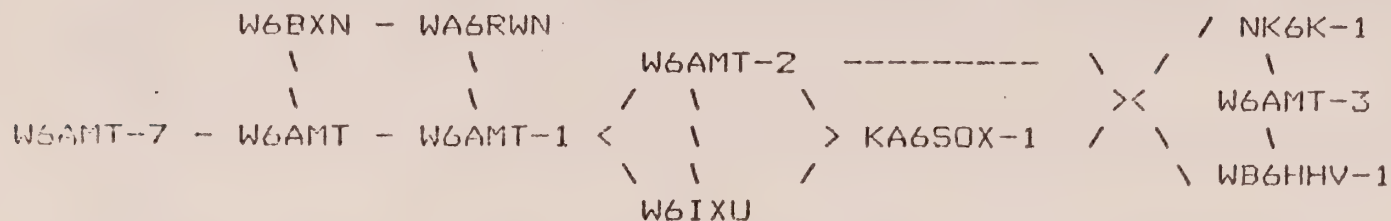| Site Location	Call Sign	Freq	Hgt ASL	Notes	Coverage Area
Onyx(above LV)	W6AMT-5	145.01	9000'		Nevada,South Utah/No. Ariz/SE Cal.
Mt. Vaca	W6AK-1	145.05	2300'	@	Sacramento Valley
Melcher Hill	WA6FSP-1	145.03	1000'		S San Francsco Bay Area
Mt. Allison	WB6RFW-1	145.01	2600'	@	Sacto Valley/So. SF Bay
Black Mt.	N6IIU-1	145.01	2400'	@	San Francisco Bay Area
White Mt.	WA6RWN-1	145.01	14,200'		So CA/No AZ/So NV
Frazier Peak	WA6GML-1	145.01	8000'		Kern Co./LA/San Diego
San Diego	W6AMT-4	145.01	4000'		San Diego/Los Angeles
Sonoma Mountain	KA6ATN-1	145.01	3000'	@	North Coast/Bay Area

```
* = moving to 145.05 at any time
# = mailbox system on line
@ = capable of remotely changing frequency
```

Two Meter Digipeater and Mailbox Sites of California

North/South paths: (all on 145.01 MHz.)

```
        W6BXN - WA6RWN                                    / NK6K-1
            \         \        W6AMT-2  ----------  \  /     \
             \         \       / \       \                 ><    W6AMT-3
W6AMT-7 - W6AMT - W6AMT-1 <    \         > KA6SOX-1  /  \      \
                         \   \       /                    \ WB6HHV-1
                          W6IXU
```

NOTE: The above includes only the major digipeaters in the WESTNET

    system and are NOT the only paths available.   The following is

    meant to be a guide to aid you in finding a workable path.

W6AMT-7 can see W6AMT
W6BXN can see WB6AIE-1, W6AMT, WA6RWN, WA6YLB
W6AMT can see W6AMT-1, WB6AIE-1, W6BXN, WA6RWN, WA6YLB
W6AMT-1 can see W6AMT, W6AMT-2, W6IXU, WA6RWN
WA6RWN can see W6AMT, W6AMT-1, W6BXN, WA6YLB
WA6YLB can see W6BXN, WA6RWN
W6AMT-2 can see W6AMT-1, W6AMT-3, WB6HHV-1, W6IXU, NK6K-1, KA6SOX-1
KA6SOX-1 can see W6AMT-2, W6AMT-3, WB6HHV-1, W6IXU, NK6K-1
NK6K-1 can see W6AMT-2, W6AMT-3, WB6HHV-1, KA6SOX-1
N6BMO-1 can see W6AMT-3
W6AMT-3 can see W6AMT-2, WB6HHV-1, NK6K-1, KA6SOX-1
WB6HHV-1 can see W6AMT-2, W6AMT-3, NK6K-1, KA6SOX-1

If you have any corrections, additions or other information pertinent

to this type of list, please send them to me either via the W6CUS-1

mailbox or the W6IXU mailbox. Thank you, Rick WA6NHC

ROSTER
1985 WEST NET MEETING
SPONSORED BY THE PACIFIC PACKET RADIO SOCIETY

PLEASE PRINT LEGIBLY!

CALL	NAME	ADDRESS	REPRESENTATION PACKET CLUB AND/ or DIGIPEATER ASSN
1. N1GA	DON SIMON	2327 ALVA AVE EL CERRITO, 94530	PPRS
2. W6IXU	MIKE BUSCH	1127 Hetrick Ave Arroyo Grande CA 93420	—
3. KA6M	HANK MAGNUSKI	311 STANFORD AVE MENLO PARK CA 94025	PPRS
4. WA6JPR	WALLY LINSTRUTH	806 SUMMIT RD. SANTA BARBARA CA 93108	SCDCC
5. WD6EEN	BRIAN D. WOOD	3767 VINEYARD #21 PLEASANTON CA 94454	PARK RIDGE Packer Ridge GROUP
6. WA6RWN	GREG PIERRO	BOX 4277 VISALIA CA 93278	
7. WB6DAO	PETE BICKERDIKE	187 DEL CANTO LN SB CA 93110	PARK RIDGE Packet RADIO GROUP
8. WB6KAL	GEORGE FLAMMER	5143 Shady Ave, San Jose, Ca 95129	W6AMT
9. WB6ASR	GREG CAMPBELL	1085 WINDSOR St., SAN JOSE, CA 95129	W6AMT
10. WD6E	MIKE PETTUS	34365 CAMINO EL MOLINO, CAPISTRANO BEACH, CA 92624	W6
11. AD7I	Paul Newland	POB 205, Holmdel NJ 07733	self
12. WB9FLW	Pete Eaton	35 Norspur, Rt 4, Edwardsville, IL 62165	self
13.	Bob Bowles	1020 Capuchino Ave #3 BURLINGAME Ca 94010	
14. W6SNV	JOE CASTELLANO	12510 TITUS AVE SARATOGA CA 95070	
15. KA1MRE	Clifford Neuman	500 Memorial Dr. Cambridge MA 02139	
16. WA6PED	Fred Townsend	2074 Ashwood Ln, San Jose, CA 95132	
17. KB6EMU	JUAN MONICO	504 DEER CT. SAN JOSE CA 95132	
18. WA6OSA	PAUL TIFFT	6026 N GREENWOOD CLOVIS CA 93612	
19. WA7GXD	LYLE JOHNSON	% TAPR P.O. BOX 22888 TUCSON AZ 85734-2888	
20. KA7TWQ	PHIL GRAY	BOX 731 LaGrande, OR 97850	OFRA
21. WA5MWD	David Cheek	1510 TRAVIS Garland Tex 75042 Tex Packet Radio Socity	TexNet
22. N0CCZ	ANDY FREEBORN	5222 Borrego Dr Colo Spgs Co 80918	RMPRA
23. WB6MLC	KEN CHONG	4266 WARBLER LOOP FREMONT, CA	— PPRS —
24. N6BAL	Steve Hawkins	2517 GROVE WAY #110 CASTRO VALLEY, CA 94546	
25. N6FQR	BILL DANIELSON	3428 SOUTH COURT, PALO ALTO, CA 94306	
26. K9NG	STEVE GOODE	140 W. WOOD #3c4 PALATINE, ILL. 60067	CAPRA
27. KA6SOX	TOM KING	15123 S. BROOKHURST #36 WESTMINSTER CA 92683	70cm Link

			REPRESENTATION
PLEASE PRINT LEGIBLY!			
CALL	NAME	ADDRESS	PACKET CLUB AND/ or DIGIPEATER ASSN

28 . WB6FSK STEVE HALL 664 BRISTOL AVE, SIMI VALLEY 93065 LAPG

29 WA6FSP BILL WEAVER 1072 TANLAND #214 PALO ALTO. 94303 PPRS
(NOW ON ICS DIGIPEATER)

30 KB6BA OLIVER BARRETT 1111 PECOS WY. SUNNYVALE, CA. 94089 PPRS, N6IIU

31 KB5MU Paul Williamson 6583 Edmonton Ave San Diego CA 92122 SDPG, DIGIPEAT

32 WB6HHV Mike Brock 10230 Mayor Circle, San Diego, CA 90126 SDPG, SCDCC, Host

33 WB6YMH SKIP HANSEN 3250 MARTINGALE DR. ~~SAN DIEGO~~, CA. 90274 SCDCC, Host
R.P.V.

34 NK6K Harold Price 1211 Ford Ave, Redondo Beach CA 90278 SCDCC

35 WB6AIE Jenny Braydon 1546 Loftus Ln Fresno Ca. 93710 WB6AIE-1

36 WB5OYP George Lemaster 119 Henson Way Grass Valley, CA 95945

37 VE7APU Douglas Lockhart 9531 Odlin Rd. Richmond, B.C. V6X 1E1

38 WB6GTI Bob Edwards 201 CARL DR Visalia, CA 93291

THE ABOVE LISTS ALL ATTENDEES AT THE WESTNET MEETING IN SAN FRANCISCO, MARCH 31, 1985
PLEASE NOTE THERE WERE REPRESENTATIVES FROM RMPRA (NØCZZ), OREGON PACKET RADIO ASSN
(KA7TWQ), TAPR (WA7GXD), PPRS, SCDCC (REPRESENTING LAPG AND SDPG),. VADCG (VE3APU), AND OTHER
PACKET RADIO GROUPS OUTSIDE OF WESTNET. THERE WERE MANY PACKET RADIO DIGIPEATER
OWNERS PRESENT ALSO. THIS IS A RESOURCE LIST FOR YOUR INFORMATION. BELOW ARE
A FEW ADDITIONS TO THE LIST BY PACKET RADIO ASSOCIATION PRESIDENTS WHO WROTE LETTERS
OF CONCERN BUT WHO WERE UNABLE TO ATTEND THE WESTNET MEETING. WE RECEIVED TWO VERY
NICE LETTERS FROM DENNIS GOODWIN, KB7DZ (PRESIDENT OF NAPRA) AND DAVID PEDERSEN,
N7BHC(PRES. OF UPRA) BOTH OF WHOM ARE PLANNING MANY PACKET RADIO DIGIPEATER LINKS.
INCLUDED ALSO ARE A FEW OTHER DIGIPEATER OWNERS IN WESTNET AND REPRESENTATIVES OF
OTHER WESTNET PACKET RADIO ASSOCIATIONS THAT EXPRESSED CONCERN, BUT WERE UNABLE TO ATTEND
IN PERSON.

39 N7BHC DAVID PEDERSEN (PRES UPRA) 4382 Cherryview Dr. West Valley City, Ut   UPRA-NCA UTAH

40 KB7DZ DENNIS GOODWIN (PRES NAPRA) 1748 Harrison Ave. S.E. #M4, Port Orchard Wash. 98366
NAPRA

41 K6QIF Keith Crandall, 3616 Downey Way, Sacramento, Ca. 95817   SACPAC(Sacramento Packet
RADIO) & W6AK-5

42. K6IXA GRADY WILLIAMS, 1480 Spalding, Atwater, Cal., 95301   W6BXN DIGIPEATER
FREMONT PEAK (ABOVE MERCED)

43. KE6ZE DAVE ENGLE (PRES PPRS) 1063 SUMMERWOOD CT., SAN JOSE, CA. 95132   PPRS

FIG 1.

ETC

arrows indicate
two way link via
two meters
1200 BAUD

TYPICAL   PHASE A LINKING
LINKING   ALL DONE ON ONE 2M FREQ.
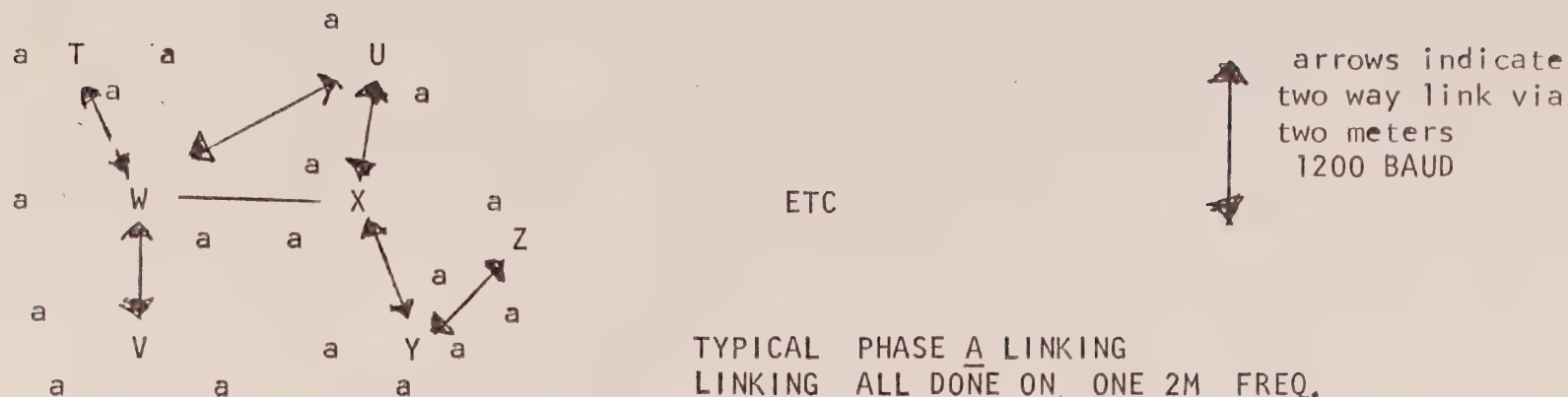
LEV. 2 PHASE A
DIGIPEATER X CAN BE BOGGED DOWN RELAYING TRAFFIC FROM "W""TO "Y" BECAUSE IT IS
HEARING TOO MANY OTHER LANS AND DOES NOT TRANSMIT THUS CREATING REPEAYED RETRANSMISSIONS
OR OTHERWISE CAUSING COLLISIONS. THROUGHPUT IS SEVERELY LIMITED. T,U,V,W,X,Y, AND Z
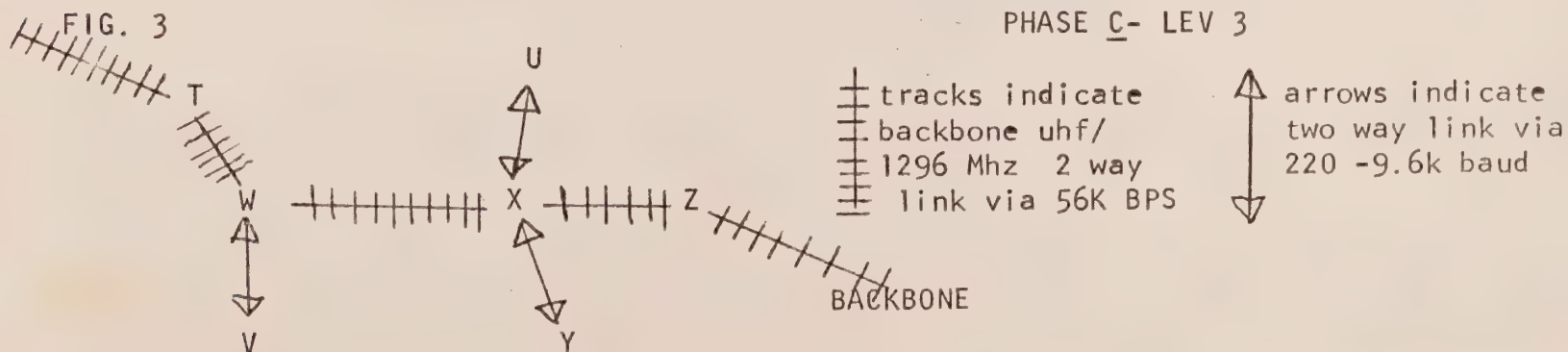ARE HIGH LEVEL DIGIPEATERS LINKED ON THE SAME 2METER FREQUENCY. a ARE MEDIUM LEVEL
DIGIPEATERS..

FIG 2.

PHASE B LINKING-

arrows indicate
two way link via
220 MHZ 9.6K BAUD
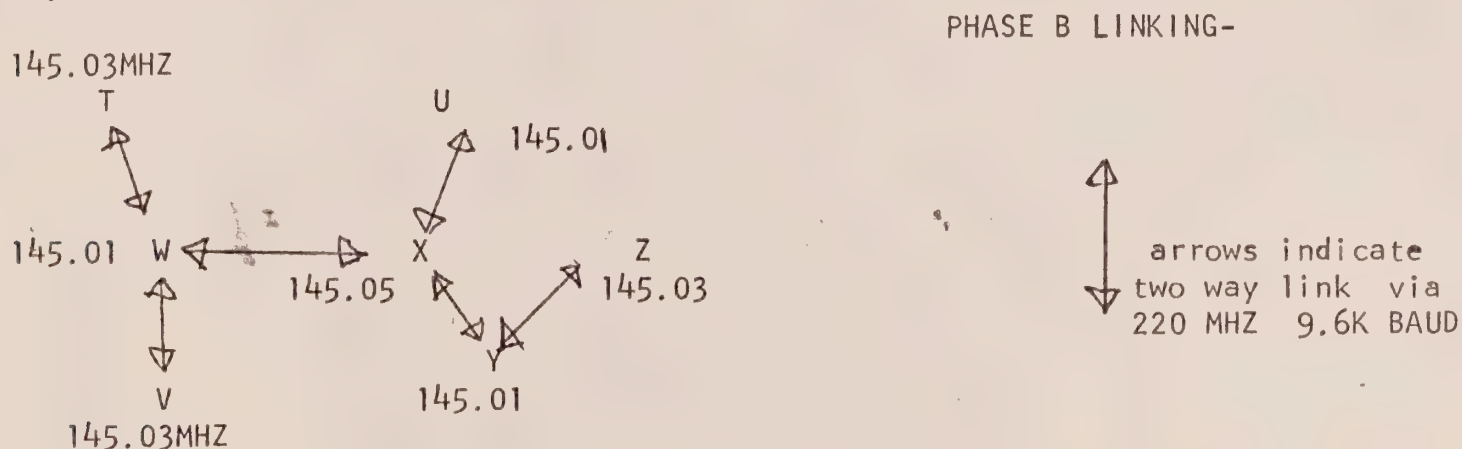
PHASE B LINKING - 220 MHZ   9.6K BAUD   INTERTIES ALLOW THE HIGH LEVEL DIGIPEATERS
TO TRANSFER INTERNET MESSAGES VIA 220 THUS ALLOWING THE LANS TO STAGGER
FREQUENCIES WHICH GREATLY DIMINISHES NET LOADING AND COLLISIONS. DIGIPEATERS
T,U,V,W,X,Y,Z, ARE SUPPORTED BY DUAL FREQUENCY /DUAL PORTED DIGIPEATERS SUPPORTING
BOTH 2METER 1200 BAUD PACKETS AND 220 MHZ 9.6 K BAUD PACKETS AT THE SAME SITE.
LANS AT T,U,V,W,X,Y,Z STAGGER OPERATIONS ON 145.01,03,05, etc.

FIG. 3

PHASE C- LEV 3

tracks indicate
backbone uhf/
1296 Mhz 2 way
link via 56K BPS

arrows indicate
two way link via
220 -9.6k baud

BACKBONE

PHASE C   FUNCTIONS AS A TRIPLE PORTED DIGIPEATER OPERATING ON THREE FREQUENCIES
AND BAUD RATES 2METER 1200 BAUD- 220MHZ 9.6 K BAUD AND 56K BAUD ON 440MHZ OR 1296 MHZ.
NODES T ,W, X, AND Z ARE THREE TIERED DIGIPEATERS WHILE U,V,S AND Y REQUIRE NO
ADDITIONAL MODIFIACTIONS.

FIG .4   TRUNKLINE BACKBONE SYSTEM (REDUNDENT)
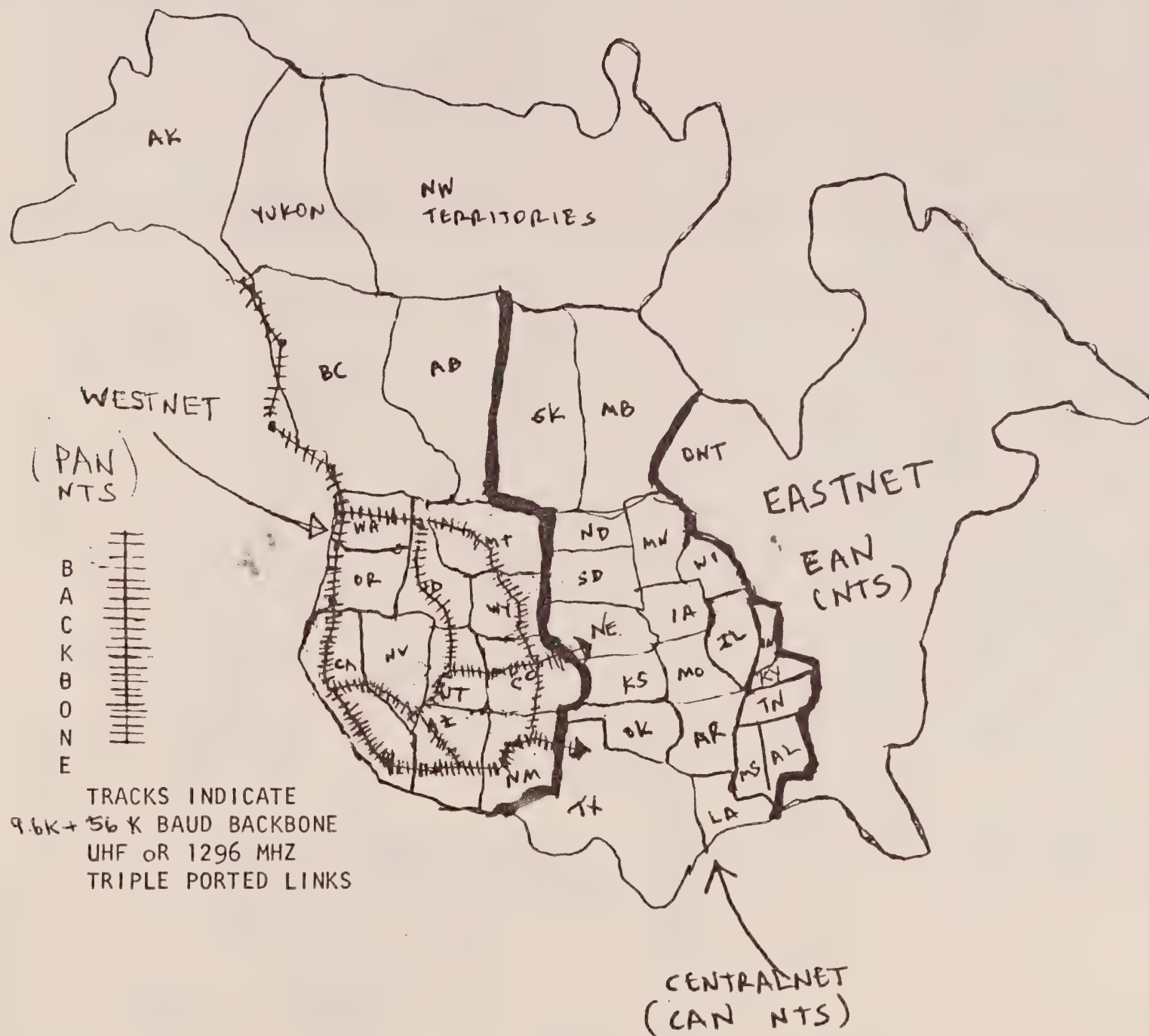
SHOWING   EASTNET, CENTRALNET , AND WESTNET   DEFINED BY PRESENT NATIONAL TRAFFIC SYSTEM
AREAS. WESTNET IS REDUNDENTLY LINKED VIA A BACKBONE SYSTEM. ANCILARY SECTIONS CAN
 JOIN THE BACKBONE VIA 220 MHZ 9.6K BAUD LINKS INTO THE TRUNK LINE. CROSSOVER TO CENTRAL
AREA CAN BE ACHIEVED VIA COLORADO OR OTHER POINTS.
 ENTRY LEVEL IS STILL ACCESSIBLE VIA 1200 BAUD 2 METER FM OR 9.6K BAUD 220 MHZ IF
ONE WANTS TO SKIP THE PHASE"A" TECHNOLOGY.   ALL   56.K BAUD TRUNKLINE BACBONE SYSTEMS
CARRY ALL THREE FREQUENCIES AND   BAUD RATES IE; 1200 BAUD 2METER- 9.6 K BAUD 220 MHZ-
AND 56.K BAUD 1296 MHZ. NO LAN SHOULD BE MORE THAN 2 HOPS VIA 9.6K BAUD PATH TO
A BACKBONE ENTRY NODE.

WESTNET -HIGHLEVEL DIGIPEATERS
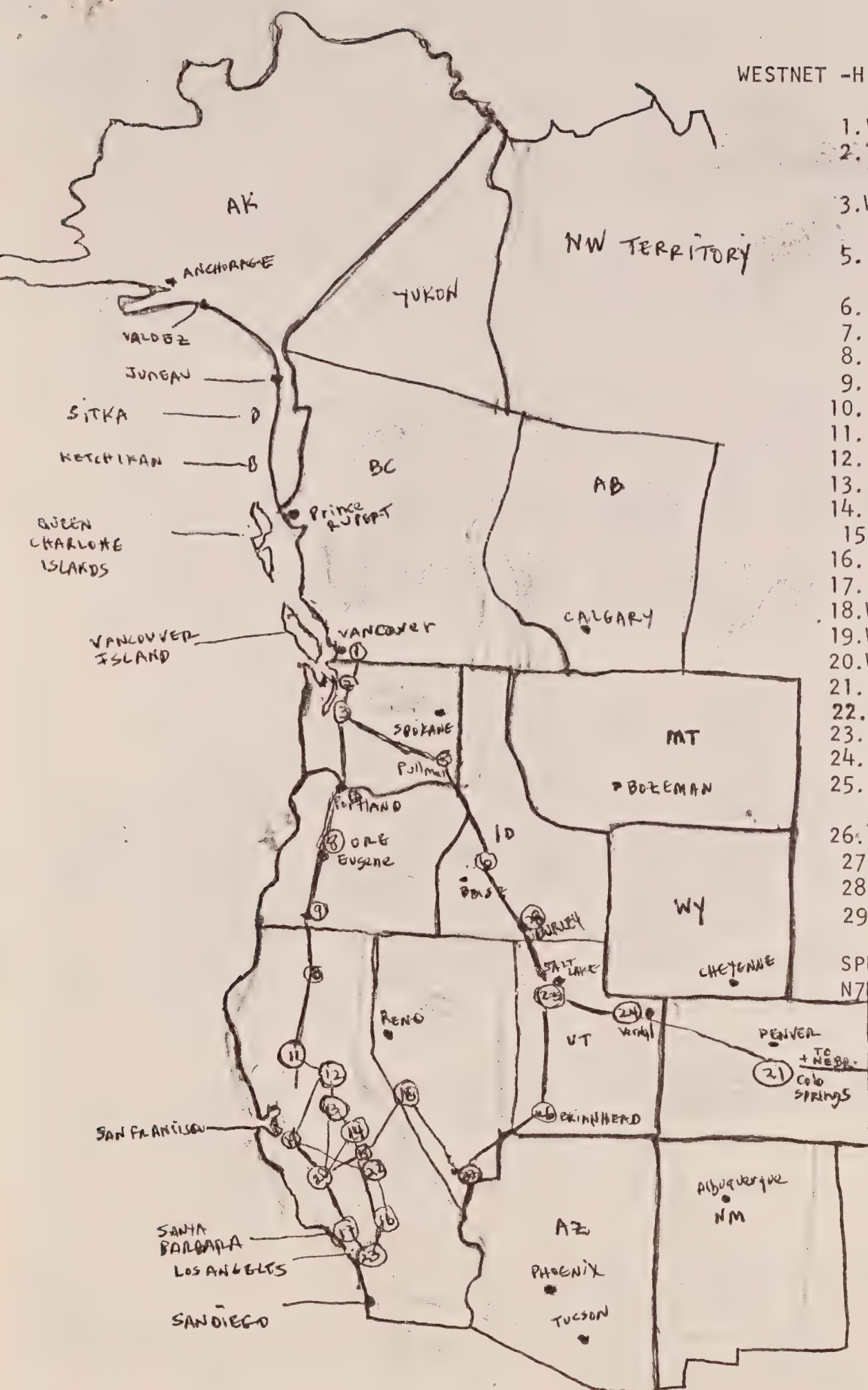
1. VE7PKT -BURNABY ,B.C. 1000'
2. WB6VAC-RATTLESNAKE RIDGE
   3000 ' -200W ERP
3. WN7ANK=5:50M SESEATTLE-SPG 85
   GRASS MTN - 5000'-50W ERP
5. KAMIAK BUTTE-PULLMAN,WA
   UNDER DEVELOPEMENT
6. BOISE   (UD)
7. PORTLAND (UD)
8. EUGENE (UD)
9. MT. ASHLAND 7000' (UD)
10. MT.SHASTA 9000'-SUMMER 85
11. ST.HELENA 5000'-SUMMER 85
12. PLACERVILLE 2300+W6AK-5-S85
13. W6BXN   - 4000'-Mt.BEACON
14. WB6AIE-1-5300'-BALD MTN
15. WA6RWN- 8000'-PARK RIDGE
16. WB6GML-1 8000'-FRASIER MTN
17. W6AMT-2 Santa Ynez-4000'
18. WA6RWN-1 WHITE MTN-14,200'
19. W6AMT -LOMA PRIETA-4000'
20. W6AMT-1,WILLIAMS HILL, 3000'
21.   NØCCZ - PIKES PEAK-14,000'
22. WA6YLB ,BLUE RIDGE ,5700'
23. NK6K-1 .1400' LA
24. BLUE MTN-E.VERNAL -SUMMER85
25. Oquirrhh MTNs-10,500'-
    SUMMER 85
26. BRIANHEAD (UD) DATE UNKNOWN
27.   LAS VEGAS (UD)
28. BURLEY ,ID-SUMMER 85
29. W36RFW-1- MT ALLISON -3000'
    80 W ERP

SPECIAL THANKS FOR INFO FROM
N7BHC -UPRA

UD=UNDERDEVELOPEMENT
ALL OTHER DIGIPEATERS
LISTED ARE OPERATIONAL
UNLESS DATES FOLLOW LIST-
ING.

DIGIPEATER LIST EXISTENT AND PROPOSED .
WESTNET SPRING 1985- HIGHLEVEL SITES ONLY
PIKES PEAK IS COMMITTED TO KANSAS AND NEBRASKA- NOTICE THAT PIKES PEAK CAN EASILY
MAKE NORTHERN NM AND THAT LAS VEGAS IS EASY INTO ARIZONA.
LINES SHOW PATHS FOR 9.6K BAUD 220.95 .MHZ DUAL PORTED SYSTEMS-

Letter from Brian McCullough, VE6BDG:

•••

I.was at the Fifth West Coast Computer Faire in San Francisco
during the last month and had a chance to talk about packet radio
and also your newsletter.

Therefore I am enclosing a cheque for the sum of $10 to cover
the mailing costs for myself and Dave Caulkins of PCNET. (Los Altos,
California). I had a lot of interest expressed in the newsletter
and would like you please to send the introductory issue to the
following people:

•••

You might also note that The Aurora Computer Society's Committee
on Inter-Computer Communications is in the process of designing a
board to act as an interface between an ordinary VHF Transceiver
and a computer serial port using ideas from Montreal. We are also
intending to use a slightly modified Montreal packet format and
will give more details as time goes on.

Communications should be addressed to: TACS/ICC, Site 9, Box 37,
RR2, Sherwood Park, Alberta T8A 3K2

For those that are interested, I have been able to arrange for
a fairly good discount on the pair of Exar chips used in our and
Montreal's design.

THE AURORA COMPUTER SOCIETY
COMMITTEE ON INTER-COMPUTER COMMUNICATIONS

At present there are three groups responsible for different
areas of communications. Any comments, suggestions or contributions
(information, material, volunteers etc.) regarding packet radio or
communications in general should be addressed to Brian McCullough,
TACS-ICC, Site 9, Box 37, RR2, Sherwood Park, Alberta T8A 3K2.

Anything to do with telephone communications should be addressed
to Mike Alkalay at: ICC-Telephone, 7318-155 St., Edmonton, Alberta T5R 1V5
At the moment Mike is especially interested in information on VERY CHEAP
Originate/Answer Bell 103-type modems and any communications software
that may be available.

Finally, Les Davies is the person to send information to
regarding HF Packet Radio. As soon as a protocol is agreed upon, we hope
to join the Cross-Canada Packet Net on 14.076Mhz and get better
communications with the rest of Canada. His address is: ICC-HF,
12142-95 St., Edmonton, Alberta T5G 1M8.

Any assistance that anyone can give the three of us will be
greatly appreciated.

Currently, we have been offered a 2m voice repeater for our use in
packet, and so will not at first include any intelligence at the repeater
site. Eventually, however, (six months?) we hope to develop a system
similar to Ottawa's, combining a CBBS, Packet Repeater, Gateway to PCNET,
Gateway to the HF Packet Net and Miscellaneous other services.

We are also investigating the possibilities for a VERY wide
coverage packet repeater (Edmonton to Calgary), but this is just in the
very early stages.

THE EDMONTON PACKET RADIO MODEM

This board has been designed to interface any computer's serial port to an ordinary VHF FM Transceiver. The board was designed to be mounted in a shielded case with four connections: Power, External Speaker, Microphone, Computer. Choice of connectors is purely (completely) optional as those on the transceiver since the kit will just include the board and ports, with case and connections up to the user. The board will be approximately 7.5 x 12.5cm. and will include artwork for a power supply that can be used to power the transceiver as well as the modem. The modem itself takes serial data from a computer, provides audio tones to the input of the FM transceiver, receives audio tones from the output of the transceiver and converts them into serial data and sends it to the computer. The board also uses one control and one status line from the computer. RTS actually keys the transceiver's push to talk line, and the board provides a DCD (Data Carrier Detect) to the computer. Data speed is 2400bps using tones of 2.4 and 4.4Khz (Legal for Packet).

ed. note:there is some current doubt about the legality of these
tones, for use on 2m FM. The next newsletter should have
more details on this question.

At the constructor's option, the board can use either TTL or RS-232 signals.
Documentation will include diagrams suggesting possible interconnection to allow convenient change-over between voice and data.

There has been a proposal that the modem be produced on standard 22/44 pin cards, probably requiring deletion of the power supply artwork. We would appreciate any comments pro or con.

PACKET FORMAT

The following is the TACS-ICC packet format, as of June 21, 1980. It is closely modeled on that of the Montreal group.

Description	# of bytes	Notes
SYN (7FH)	1	1
SYN (7FH)	1	1
SOH (01H)	1	1
Dest. call sign	10	2
Dest. Node ID	2	3
Org. call sign	10	2
Org. Node ID	2	3
System Flag	1	4
Node count	1	5
Sequence count	1	6
Length	1	7
Checksum	2	8
Data	0-256	-

Header:	31	bytes
Data:	256	bytes
Checksum:	2	bytes

	289	Max.
	33	Min.

1) Two ASCII SYN bytes followed by an ASCII 'SOH' (start of header) are used to signal the start of a packet.

2) Montreal's format uses only 6 bytes for each call sign with the reasoning that the DOC no longer requires portable or mobile logging. However, 'out of area' call signs are a possible source of confusion. For example, if a packet arrives at a VE1 destination with only a VE7 call sign as origin, one would assume that the packet originated in British Columbia. If, however, he was operating '-Portable VE1', you have immediate chaos. Therefore we have included space for this designator in the call signs.

3) These two bytes indicate which packet repeaters either originated or destinated the packet. Montreal feels that the Node ID would be two arbitrary characters indicating the repeater. The ICC, after much discussion, would like to offer the following proposal which, if adopted, would negate my argument of Note 2 above:

	BYTE 1		BYTE 2	
	Nybble 1	Nybble 2		
NODE	Country	Call	Repeater Number	
ID	Code	Area	0-255 (FFH)	

For example, the address part of a packet going from me in Edmonton, to Bob Rouleau in Montreal, would be as follows:

VE2PY-0200HVE6BDG0600H

This, of course, firmly binds a call area to a call sign, and means that the objection to six character call sign spaces no longer exists.

N.B. This system breaks down as soon as we have more than sixteen countries working packet, but I don't see it as an immediate problem. In any case, if and when that time comes, we could consider moving the call area into the second byte, thus allowing only (?) sixteen repeaters per call area.

4) The System Flag is used to tell various things about the packet, and is bit-encoded to allow a total of eight different possible flags. At present five have been allocated, as follows:

```
                                Bit Number
                                ----------
                            7 6 5 4 3 2 1 0
System Byte       ---"      A R F B T X X X
```

KEY to bits set

    A = Packet acknowledges one or several others
    R = Packet has been thru an intelligent repeater
    F = File transfer is in progress
    B = Packet contains Binary rather than ASCII data
    T = This is a broadcast packet
    X = These bits are not currently allocated

5) The Node Count has been included for the convenience of those among us who want to play with network analysis, queueing theory and other such esoteric subjects. This number is incremented each time the packet passes through an intelligent repeater, including gateways.

6) The Sequence Count is used to count blocks during a multi-packet exchange such as a file transfer. This way, if one packet overtakes a preceding one, they will be reassembled in the correct order.

7) The Length is simply a one byte count of the data in the packet. (Data-1 except for special case Data=0). The length will be zero for both zero and one byte of data. The receiving processor will know from the rest of the header which case is true. For instance, an ACK packet will normally have no data.

8) At the moment this follows an idea from the PCNET protocol, which is to have two separate bytes of checksum, one being for odd bytes, the other for even bytes. Eventually we intend to go to a true CRC but at present for simplicity, are using checksums.

NEW PACKET RADIO NAMES

```
John MacMillan    VE1BJC/4 Room 219A, Kelsey House, Pinawa, Man. ROE 1L0
Dave Rees-Thomas  VE3JHE  RR#1, Swastika, Ont POK 1T0
Gil Boelke        W2EUP   BARRA, 505 Main St., West Seneca, N.Y. 14224
L.J. Vroomen              817 Sherbrooke St W., Montreal PQ H3A 2K6
Peter Macaulay           PO Box 7066N, Halifax, NS B3K 5J4
Brian McCullough  VE6BDG Site 9, Box 37, RR2, Sherwood Park, Alta T8A 3K2
Wes Thomas               606 5th Ave., E. Northport, NY 11731
Peter Stark       K2OAW   PO Box 209, Mt. Kisco, NY 10549
Terry Wilcox      VE6BEZ  8610-94 Ave, Ft. Saskatchewan, Alberta, T8L 1B1
John Touzel       VE6DH   8512-144 Ave., Edmonton, Albeta T5E 2H6
Theodor Nelson           Box 3, Schooleys Mountain, New Jersey 07870
Les Davies        VE6AHM  8839-90 St., Edmonton, Alberta T6C 3L7
Stephen Mead      VE6BGI  5237-52 St., Leduc, Alberta T9E 2T9
Rene Prevost      VE6UJ   19 Midridge Green SE, Calgary, Alberta T2X 1C9
Jerry Hall        K1TD    225 Main St., Newington, Conn. 06111
Doug DeMaw        W1FB    225 Main St., Newington, Conn. 06111
Randy Smith       VE1SAT  PO Box 881, Greenwood, N.S. BOP 1N0
Den Connors       KD2S    9 Kinderhook St., Chatham, NY 12037
Martin Guthrie    VE5GK   1809 Easthill, Saskatoon, Sask S7J 3C2
```